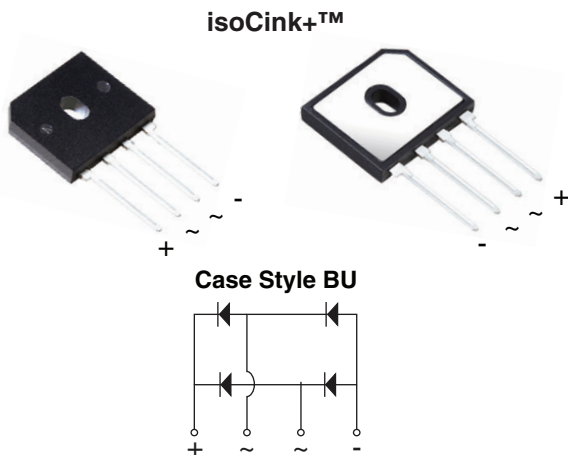


## Enhanced isoCink+™ Bridge Rectifiers



Case Style BU

### FEATURES

- UL recognition file number E312394
- Thin single in-line package
- Glass passivated chip junction
- Superior thermal conductivity
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
**HALOGEN**  
**FREE**  
Available

### TYPICAL APPLICATIONS

General purpose use in AC/DC bridge full wave rectification for switching power supply, home appliances and white-goods applications.

### MECHANICAL DATA

**Case:** BU

Molding compound meets UL 94 V-0 flammability rating  
Base P/N-E3 - RoHS-compliant, commercial grade  
Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade

**Terminals:** matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 and M3 suffix meet JESD 201 class 1A whisker test

**Polarity:** as marked on body

**Mounting Torque:** 10 cm-kg (8.8 inches-lbs) max.

### LINKS TO ADDITIONAL RESOURCES



3D Models

#### PRIMARY CHARACTERISTICS

|                        |                      |
|------------------------|----------------------|
| $I_{F(AV)}$            | 10 A                 |
| $V_{RRM}$              | 600 V, 800 V, 1000 V |
| $I_{FSM}$              | 120 A                |
| $I_R$                  | 5 $\mu$ A            |
| $V_F$ at $I_F = 5.0$ A | 0.88 V               |
| $T_J$ max.             | 150 °C               |
| Package                | BU                   |
| Circuit configurations | In-line              |

#### MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)

| PARAMETER                                                                                    | SYMBOL                            | BU1006                                | BU1008 | BU1010 | UNIT             |
|----------------------------------------------------------------------------------------------|-----------------------------------|---------------------------------------|--------|--------|------------------|
| Maximum repetitive peak reverse voltage                                                      | V <sub>RRM</sub>                  | 600                                   | 800    | 1000   | V                |
| Average rectified forward current (Fig. 1, 2)                                                | I <sub>O</sub>                    | T <sub>C</sub> = 92 °C <sup>(1)</sup> |        |        | A                |
|                                                                                              |                                   | T <sub>A</sub> = 25 °C <sup>(2)</sup> |        |        |                  |
| Non-repetitive peak forward surge current<br>8.3 ms single sine-wave, T <sub>J</sub> = 25 °C | I <sub>FSM</sub>                  | 120                                   |        |        | A                |
| Rating for fusing (t < 8.3 ms) T <sub>J</sub> = 25 °C                                        | I <sup>2</sup> t                  | 60                                    |        |        | A <sup>2</sup> s |
| Operating junction and storage temperature range                                             | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150                           |        |        | °C               |

#### Notes

(1) With 60 W air cooled heatsink

(2) Without heatsink, free air

**ELECTRICAL CHARACTERISTICS** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

| PARAMETER                                                      | TEST CONDITIONS      | SYMBOL                              | TYP. | MAX. | UNIT          |
|----------------------------------------------------------------|----------------------|-------------------------------------|------|------|---------------|
| Maximum instantaneous forward voltage per diode <sup>(1)</sup> | $I_F = 5.0\text{ A}$ | $T_A = 25\text{ }^{\circ}\text{C}$  | 0.98 | 1.05 | V             |
|                                                                |                      | $T_A = 125\text{ }^{\circ}\text{C}$ | 0.88 | 0.95 |               |
| Maximum reverse current per diode                              | rated $V_R$          | $T_A = 25\text{ }^{\circ}\text{C}$  | -    | 5.0  | $\mu\text{A}$ |
|                                                                |                      | $T_A = 125\text{ }^{\circ}\text{C}$ | 64   | 250  |               |
| Typical junction capacitance per diode                         | 4.0 V, 1 MHz         | $C_J$                               | 43   | -    | pF            |

**Note**

<sup>(1)</sup> Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

**THERMAL CHARACTERISTICS** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

| PARAMETER                  | SYMBOL                          | BU1006 | BU1008 | BU1010 | UNIT |
|----------------------------|---------------------------------|--------|--------|--------|------|
| Typical thermal resistance | R <sub>θJC</sub> <sup>(1)</sup> | 3.0    |        |        | °C/W |
|                            | R <sub>θJA</sub> <sup>(2)</sup> | 20     |        |        |      |

**Notes**

<sup>(1)</sup> With 60 W air cooled heatsink

<sup>(2)</sup> Without heatsink, free air

**ORDERING INFORMATION** (Example)

| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
|---------------|-----------------|------------------------|---------------|---------------|
| BU1006-E3/45  | 4.55            | 45                     | 20            | Tube          |
| BU1006-E3/51  | 4.55            | 51                     | 250           | Paper tray    |
| BU1006-M3/45  | 4.55            | 45                     | 20            | Tube          |

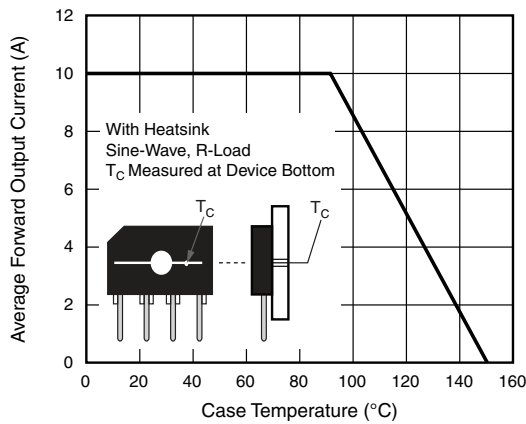
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise specified)


Fig. 1 - Derating Curve Output Rectified Current

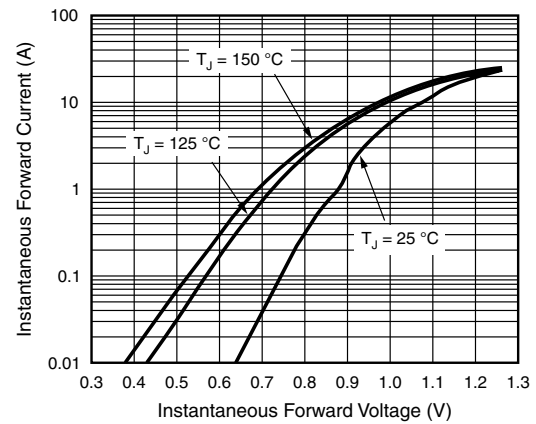


Fig. 4 - Typical Forward Characteristics Per Diode

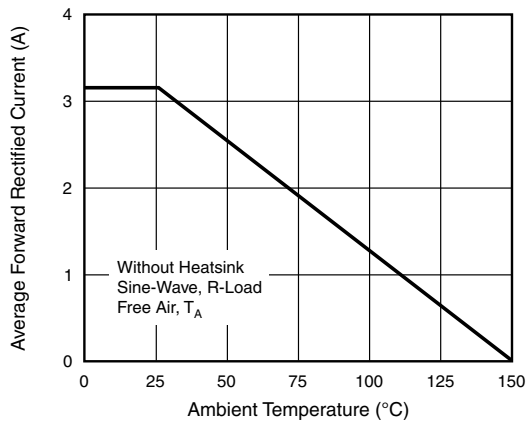


Fig. 2 - Forward Current Derating Curve

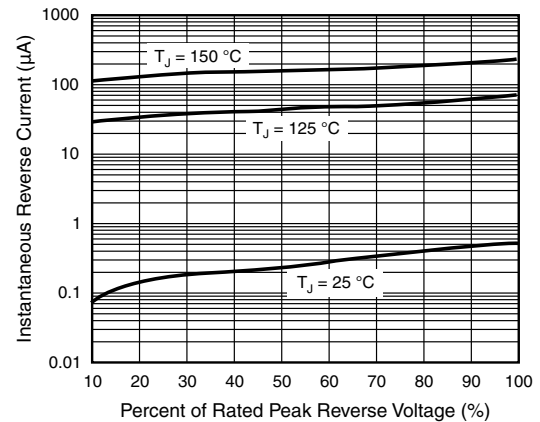


Fig. 5 - Typical Reverse Characteristics Per Diode

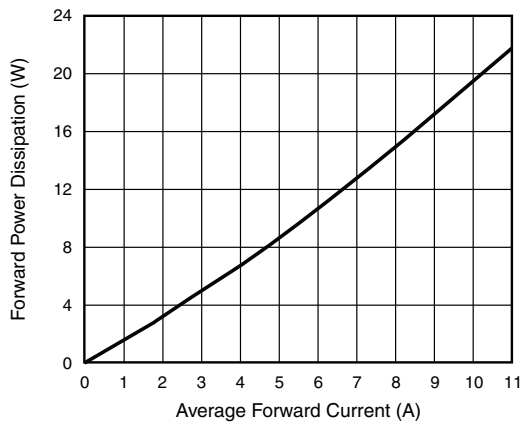


Fig. 3 - Forward Power Dissipation

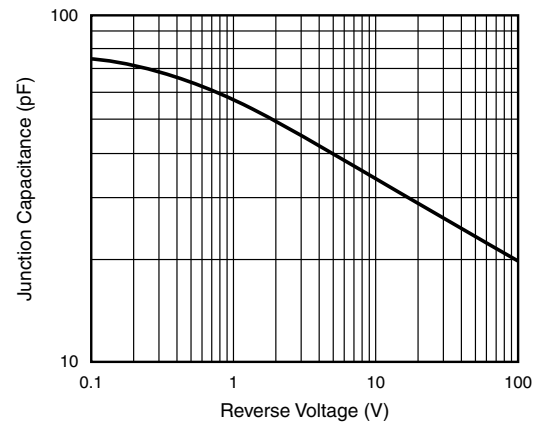
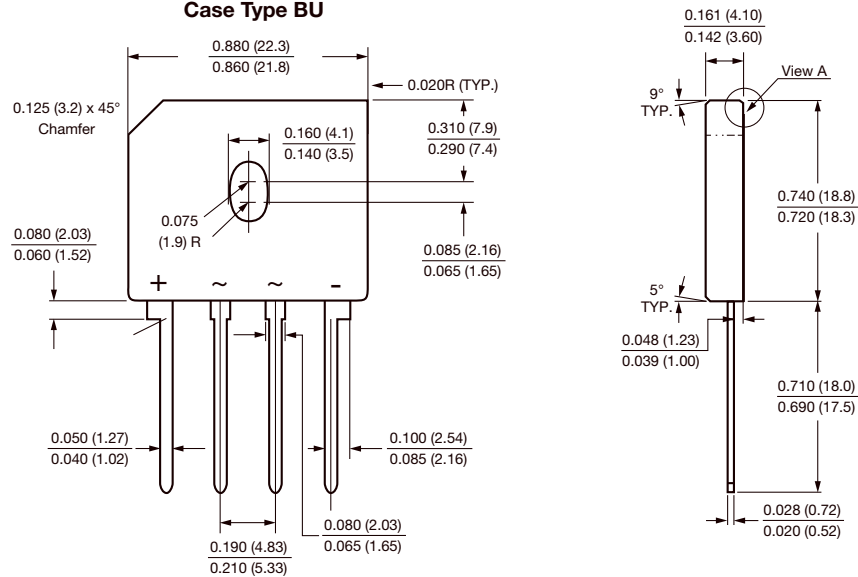


Fig. 6 - Typical Junction Capacitance Per Diode

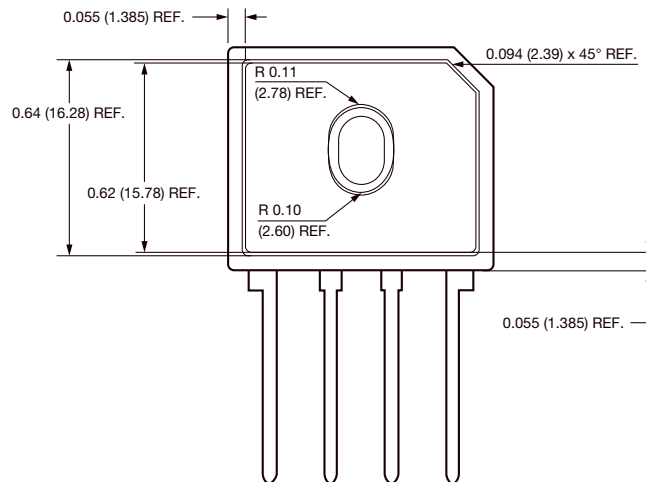


**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

**Case Type BU**

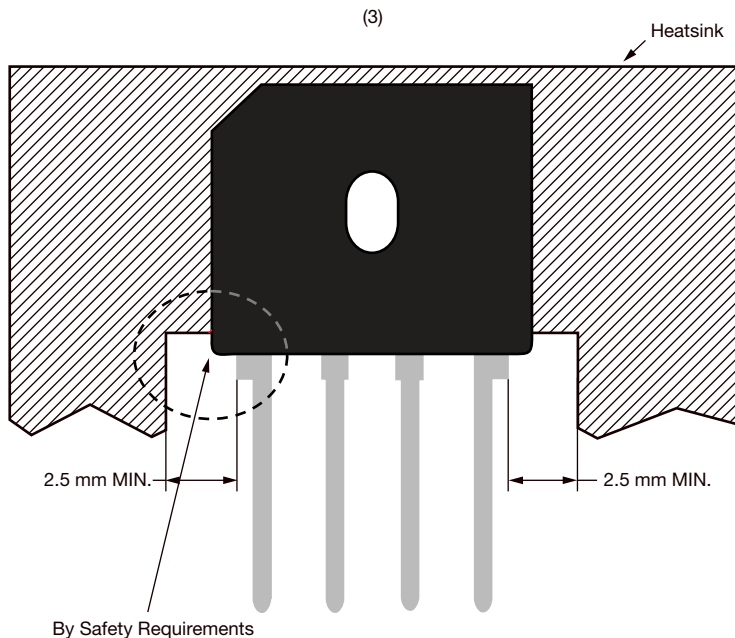


Polarity shown on front side of case, positive lead beveled corner



# APPLICATION NOTE

1. Device UL approved for safety use dielectric strength of 1500 V
2. If device is mounted in Floating Ground (F. G.) application, insulator is recommended to use to meet safety requirement.
3. Heat sink shape recommendation:





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